13

NCHSR National Health Care Expenditures Study

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Out-of-Pocket Expenditures for Personal Health Services

Data Preview 13

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Office of Health Research, Statistics, and Technology
National Center for Health Services Research

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Background of the Study

Examining how Americans use health care services and determining national patterns of health expenditures and insurance coverage are the goals of a landmark study by the National Center for Health Services Research (NCHSR). A major component of NCHSR's Intramural Research Program, the National Health Care Expenditures Study (NHCES) will provide information on a number of critical issues of national health policy. Topics of particular interest to government agencies, legislative bodies, health professionals, and others concerned with health care policies and expenditures include:

- The cost, utilization, and budgetary implications of changes in federal financing programs for health care and of alternatives to the present structure of private health insurance.
- The breadth and depth of health insurance coverage.
- The proportion of health care costs paid by various insurance mechanisms.
- The influence of Medicare and Medicaid programs on the use and costs of medical care.
- How and why Medicaid participation changes over time.
- Patterns of use and expenditures as well as sources of payment for major components of care.
- The cost and effectiveness of different federal, state, and local programs aimed at improving access to care.
- The loss of revenue resulting from current tax treatment of medical and health insurance expenses, particularly with regard to the benefits currently accruing to different categories of individuals and employers, and the potential effects on the federal budget of proposed changes to tax laws.
- How costs of care vary according to diagnostic categories and treatment settings.

The data for these studies were obtained in the National Medical Care Expenditure Survey (NMCES), which has provided the most comprehensive statistical picture to date of how health services are used and paid for in the United States. The survey was completed in September, 1979.

Data were obtained in three separate, complementary stages. About 14,000 randomly selected households in the civilian, noninstitutionalized population were interviewed six times over an 18-month period during 1977 and 1978. This survey was complemented by additional surveys of physicians and health care facilities providing care to household members during 1977 and of employers and insurance companies responsible for their insurance coverage.

Funding for NMCES was provided by NCHSR, which co-sponsored the survey with the National Center for Health Statistics. Data collection for the survey was done by Research Triangle Institute, NC, and its subcontractors, National Opinion Research Center of the University of Chicago, and Abt Associates, Inc., of Cambridge, MA, under contract HRA 230-76-0268. Data processing support was provided by Social and Scientific Systems, Inc. of Washington, DC, under contracts 233-79-3022 and 233-80-3012.

This report is one of a Data Preview Series that will present estimates of several key measures of health insurance, use, and expenditures for ambulatory services provided by physicians and other health care professionals; inpatient hospital services; dental services; and prescribed medicines.

Even though NMCES was designed to meet specific research goals, NCHSR intends to make the information collected in these surveys available to researchers and other interested persons through public use tapes.

NHCES reports are available from NCHSR, Publications and Information Branch, Room 7-44, 3700 East-West Highway, Hyattsville, MD 20782, 301/436-8970. The graphics and editorial coordinator for this publication series is Maria Friedman.

Additional information on the National Health Care Expenditures Study is available from:

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DHHS Publication No.
(PHS)82-3332

Out-of-Pocket Expenses for Personal Health Services

Louis F. Rossiter and Gail R. Wilensky

Concerns about health care costs typically focus on total expenditures for services. But these expenditures may have little relationship to the magnitude of individual or family out-of-pocket expenses that remain after payment for health services by public or private third-party payers.

This data preview from the National Health Care Expenditures Study (NHCES) presents the financial burden on individuals and families of out-of-pocket expenditures for health care in 1977. While high out-of-pocket expenses were relatively rare, nearly one-tenth of all families in the United States spent 10 percent or more of their income on personal health care beyond the amounts paid by insurance or other third party payers. In addition, estimates of out-of-pocket expenses for personal health care, exclusive of health insurance premiums, are presented for selected population groups. The distribution of total out-of-pocket expenditures among various types of health services is shown, as is the distribution of persons and families with health expenditures by intervals of annual out-of-pocket expense. Also shown are expenses per person with expense by age, sex, and perceived health status, and by family income according to U.S. Census region. All findings are from household data reported for the period January 1 to December 31, 1977 in the National Medical Care Expenditure Survey (see pages 10 and 11 for the sources and limitations of these data).

Annual out-of-pocket expense

Table 1 shows that 75.3 percent of the U.S. population had at least some out-of-pocket expenses for personal health services in 1977. This percentage varied with the characteristics of the population, particularly by age, race, income, and education. The mean annual out-of-pocket expense was $205 per person with expense; it was $155 per capita (that is, spread across the entire population).

Expense per person also varied by most of the population characteristics shown. The range was widest among age groups; those less than 6 years had out-of-pocket expenses of $97 per person, compared to $326 for those 65 years and older. Females incurring out-of-pocket expenses for health care spent $230 on average, compared to $175 for males, or a 24 percent difference. Expenses by persons in different ethnic/racial groups were comparable, however, for those with out-of-pocket expense.

Differences by income and education exist but were not consistent. Those in families in the lowest income groups spent on average $241 per year out of pocket for health services, while outlays for those in the higher family income brackets were just below $200. By contrast, the only group with lower out-of-pocket expenses ($187) than the population total ($205) were those with 12 years of schooling among educational groups. The employed and unemployed had annual out-of-pocket expenses comparable to the population total, but persons not in the labor force, a group including the elderly, spent considerably more ($282).

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Table 1. Annual out-of-pocket expenses for personal health services: Percent of persons with and without out-of-pocket expenses, and means per person and per person with out-of-pocket expense. *NMCES household data: United States, 1977.*

Population characteristics	Total population (in thousands)	Persons without out-of-pocket expenses	Persons with out-of-pocket expenses	Expense per person with out-of-pocket expense ($)	Out-of-pocket expense per person ($)
		Percent		Mean	
Total[a]	212,098	24.7	75.3	205	155
Age in years					
Less than 6	18,216	27.3	72.7	97	70
6 to 18	50,647	30.7	69.3	148	102
19 to 24	22,299	28.7	71.3	184	131
25 to 54	78,472	23.1	76.9	206	159
55 to 64	20,180	18.1	81.9	295	242
65 or older	22,284	16.7	83.3	326	272
Sex					
Male	102,602	29.3	70.7	175	124
Female	109,496	20.5	79.5	230	183
Ethnic/racial background					
White	147,239	17.3	82.7	196	162
Black	19,573	43.5	56.5	180	102
Hispanic	8,821	38.0	62.0	191	118
Family income					
Less than $12,000	74,816	33.4	66.6	241	161
$12,000 to $19,999	55,970	22.3	77.7	190	147
$20,000 or more	80,726	18.5	81.5	188	153
Education of family head					
Less than 9 years	41,295	32.2	67.8	227	154
9 to 11 years	33,679	30.8	69.2	201	139
12 years	67,505	22.9	77.1	187	144
13 to 15 years	27,906	19.4	80.6	208	168
16 or more years	32,345	15.1	84.9	224	190
Employment status					
Employed	89,077	22.4	77.6	194	151
Unemployed	5,858	26.8	73.2	197	144
Not in labor force	69,920	24.0	76.0	282	215
Place of residence					
SMSA	147,419	25.3	74.7	214	160
Other	64,679	23.4	76.6	186	142
U.S. Census region					
Northeast	47,137	24.3	75.7	216	164
North Central	58,039	21.2	78.8	175	138
South	67,357	25.8	74.2	209	155
West	39,565	28.6	71.4	235	168

[a]Includes all other ethnic/racial groups not shown separately and persons with negative income, unknown education, and not in the labor force but less than 14 years of age. **Source: National Center for Health Services Research.**

Table 2. Components of annual out-of-pocket expenses for personal health services: Means per person and per person with out-of-pocket expense by type of expense. *NMCES household data: United States, 1977.*

Type of expense	Mean per person[a]	Persons with out-of-pocket expense (in thousands)	Mean per person with out-of-pocket expense
All health services[b]	$155	159,657	$205
Ambulatory physician services	42	119,333	75
Ambulatory nonphysician services	8	24,429	67
Inpatient hospital services	19	10,001	409
Inpatient physician services	15	12,572	257
Dental services	39	73,820	113
Prescribed medicines	19	106,377	38
Eyeglasses and contact lenses	7	19,268	72
Medical equipment and supplies	3	11,260	61

[a]In the U.S. population (see Table 1). [b]Includes other hospital-related expenses not shown separately. **Source: National Center for Health Services Research.**

Differences by place of residence and U.S. Census region indicated that those living in a Standard Metropolitan Statistical Area (SMSA) spent more out-of-pocket ($214) than those in more rural areas ($186). Expenses were highest in the West ($235) and lowest in the North Central region ($175).

Table 2 shows the distribution of total out-of-pocket expenses among various types of health services. For the entire population, dental and ambulatory physician services accounted for approximately one half of out-of-pocket expenses ($39 and $42, respectively). For those who incurred any expenses for health services, however, the out-of-pocket cost of inpatient hospital and physician services ($409 and $257, respectively) ranked well ahead of dental services ($113), and the out-of-pocket cost for inpatient physician services was more than three times that of ambulatory physician services ($75).

Individual and family out-of-pocket expenses

Tables 3 and 4 show that out-of-pocket expenses exceeding $500 were concentrated among a small percentage of the population. In the course of 1977, almost 10 percent of individuals in the population had no direct expense for services received (Table 3) and 40 percent spent between $1 and $99. Thus, almost half of the people in the United States spent less than $100 out of pocket for health services, and an additional 15 percent used no services whatever. Of the remainder, nearly 30 percent or 60.7 million persons spent between $100 and $500 per person. Approximately 14 million people spent over $500 per person (6.6 percent of the population), of whom 4.9 million (2.3 percent of the population) had incurred expenses in excess of $1,000.

High out-of-pocket expenses were incurred by a relatively large number of those in the older age groups (more than 10 percent of those 55 years or older spent in excess of $500 in 1977); by females; by those in families at the highest educational levels; and by those not in the labor force. By contrast, blacks and Hispanics were considerably less likely than whites to have any or high annual

Table 3. Levels of individual out-of-pocket expenses for personal health services: Percent distribution of persons with and without expense, by intervals of annual out-of-pocket expense. *NMCES household data: United States, 1977.*

Population characteristics	Total population (thousands)	Annual out-of-pocket expense						
		None	$1-$99	$100-$249	$250-$499	$500-$999	$1000 or more	No use of services
		Percent distribution						
Total persons[a]	212,098	9.8	40.0	19.4	9.2	4.3	2.3	15.0
Age in years								
Less than 6	18,216	15.5	53.2	14.9	3.3	0.9	0.5	11.7
6 to 18	50,647	12.9	45.8	14.0	5.0	2.8	1.6	17.8
19 to 24	22,299	10.3	39.6	17.7	8.5	3.5	2.0	18.4
25 to 54	78,472	8.2	39.0	20.9	10.0	4.7	2.2	14.9
55 to 64	20,180	5.8	30.8	26.0	14.0	7.4	3.7	12.3
65 or older	22,284	6.1	28.6	25.8	16.4	7.6	4.9	10.6
Sex								
Male	102,602	11.0	41.9	16.6	7.2	3.3	1.8	18.3
Female	109,496	8.6	38.3	22.1	11.0	5.3	2.9	11.9
Ethnic/racial background								
White	147,239	7.4	43.4	22.1	10.3	4.7	2.2	10.0
Black	19,573	19.8	35.5	11.8	5.4	2.2	1.6	23.8
Hispanic	8,821	20.0	36.0	14.8	6.0	3.1	2.1	18.1
Family income								
Less than $12,000	74,816	14.7	34.1	16.6	8.8	4.2	2.8	18.6
$12,000 to $19,999	55,970	8.1	42.9	19.8	8.5	4.3	2.1	14.2
$20,000 or more	80,726	6.3	43.5	21.7	9.9	4.4	2.0	12.2
Education of family head								
Less than 9 years	41,295	12.3	35.0	17.7	8.5	4.2	2.3	20.0
9 to 11 years	33,679	12.9	39.3	16.5	8.0	3.4	2.1	17.9
12 years	67,505	8.8	42.3	19.8	8.9	4.3	2.0	14.1
13 to 15 years	27,906	7.7	42.7	20.3	10.0	4.5	3.1	11.7
16 or more years	32,345	5.9	40.2	24.2	11.6	6.0	2.9	9.2
Employment status								
Employed	89,077	7.4	40.3	21.2	9.9	4.3	2.0	15.0
Unemployed	5,858	9.9	39.2	18.0	8.6	4.4	3.0	16.9
Not in labor force	69,920	9.2	32.8	21.0	12.1	6.4	3.8	14.7
Place of residence								
SMSA	147,419	10.3	38.7	19.3	9.6	4.5	2.5	15.1
Other	64,679	8.6	43.0	19.6	8.2	3.9	1.9	14.8
U.S. Census region								
Northeast	47,137	10.1	39.2	19.3	9.9	4.8	2.5	14.2
North Central	58,039	8.3	45.2	19.7	8.5	3.5	1.9	13.0
South	67,357	8.3	39.1	19.5	8.9	4.5	2.4	17.4
West	39,565	14.0	35.2	18.3	9.7	4.8	2.8	14.6

[a]Includes all other ethnic/racial groups not shown separately and persons with negative income, unknown education, and not in the labor force but less than 14 years of age. **Source: National Center for Health Services Research.**

Table 4. Levels of family out-of-pocket expenses for personal health services: Percent distribution of families with and without expense, by intervals of annual out-of-pocket expense. *NMCES household data: United States, 1977.*

Characteristics of family head	Total population (thousands)	Annual out-of-pocket expense						
		None	$1-$99	$100-$249	$250-$499	$500-$999	$1000 or more	No use of services
		Percent distribution						
Total[a]	79,677	5.1	21.6	22.9	20.9	15.1	9.6	4.9
Age								
19 to 24 years	8,433	9.4	39.1	22.0	13.3	5.2	3.6	7.2
25 to 54 years	43,153	4.7	20.2	23.5	21.6	15.9	10.0	4.1
55 to 64 years	12,358	4.1	16.5	22.3	22.5	17.8	12.0	4.9
65 years or older	15,318	4.7	19.8	22.0	22.1	16.0	9.8	5.6
Sex								
Male	58,383	3.9	19.1	22.4	22.2	17.2	10.7	4.6
Female	21,287	8.5	28.6	24.2	17.4	9.3	6.5	5.6
Ethnic/racial background								
White	57,323	3.3	19.6	24.4	23.3	16.9	9.9	2.8
Black	6,894	12.0	30.3	20.9	15.2	9.5	5.7	6.4
Hispanic	2,700	11.4	28.4	21.7	17.0	9.7	8.2	3.6
Income								
Less than $12,000	36,284	8.7	27.9	21.8	16.0	10.5	7.2	8.0
$12,000 to $19,999	19,129	2.6	19.0	25.9	23.1	16.1	10.3	3.0
$20,000 or more	24,018	1.8	14.2	22.2	26.6	21.0	12.7	1.7
Education								
Less than 9 years	16,300	7.5	23.2	21.9	19.8	13.1	8.2	6.3
9 to 11 years	12,316	6.6	24.6	23.2	20.0	12.5	8.2	4.9
12 years	24,103	4.2	20.4	24.1	22.0	16.3	8.7	4.4
13 to 15 years	11,051	4.2	22.1	23.2	20.9	15.1	10.6	3.8
16 or more years	12,043	2.5	17.2	21.6	22.1	18.6	14.6	3.4

[a]Includes all families for whom characteristics of head of household were not known. **Source: National Center for Health Services Research.**

out-of-pocket expenses. In addition, those in low-income families were more than twice as likely as those in high income families to have used health services without incurring any out-of-pocket expenses. Persons who lived in the Northeast, South, and West were more likely to be in the higher expense categories than persons in the North Central region of the country, but those in the West were also most likely not to have had any out-of-pocket expense.

Because families have a higher likelihood both of using services and of having out-of-pocket expenses for these services than households consisting of a single person, they were relatively more likely than individuals to have had high expenses (Table 4). For example, while 9.8 percent of all persons who used health services had no direct expenses whatever, this was found for only 5.1 percent of families. Nearly 25 percent of families had out-of-pocket expenses exceeding $500, and 9.6 percent spent $1,000 or more out of pocket.

These differences in out-of-pocket expense between individuals and families are also apparent for specific population groups. In contrast to the direct increase with age in individual out-of-pocket expenses, the likelihood that a family incurred specific amounts of out-of-pocket expense was not affected by the age of the family head, the youngest families being the exception (age of head, 19 to 24 years). Families headed by a male were much more likely than those headed by a female to have spent $1,000 or more, while families headed by a female were more than twice as likely to have had no out-of-pocket expense. For both individuals and families, however, out-of-pocket expenses in excess of $500 were most likely among whites and at higher levels of income and education. In part, this may reflect the share of dental expenses relative to total out-of-pocket costs for these population groups (Rossiter, 1982).

Expenses, perceived health status, and income

Out-of-pocket expenses for health services are of particular relevance for persons not in good health and for those with incomes at or near the poverty line. Tables 5 and 6, therefore, show mean out-of-pocket expenses by levels of perceived health status according to age and sex, and by income level according to U.S. Census region. As expected, there is a large difference in mean out-of-pocket expense across levels of perceived health, particularly for younger adults. In the 25-to-54 year age group, for example, out-of-pocket expenses by those in poor health were two-and-a-half times higher than for those in excellent health. This range was smaller for those 65 and older.

Similar ranges across groups defined by health status were observed for both males and females, although the differential by sex in out-of-pocket expense (see Table 1) is maintained regardless of health status. Whether this is due to child bearing and related expenses, to differences in the number of males and females covered by some form of health insurance, or to differences in the range of benefits, cannot be determined on the basis of the present data.

Regional differences in the distribution of out-of-pocket expenses among groups defined by family income adjusted for family size were relatively small. In all regions, the burden of out-of-pocket expense for those at or below the poverty line was at least equal to that for the higher income groups. It must be remembered, however, that both Tables 5 and 6 show only the population with expense and disregard those who either used no services or obtained them free of direct cost (see Table 3). Out-of-pocket expenses were incurred by 54 percent of the poverty group, for example, and by 83 percent of the high income group.

Out-of-pocket expense as a share of family income

Another approach to assessing the financial burden of health care is to examine out-of-pocket expenses relative to family income. A

Table 5. Annual out-of-pocket expenses for personal health services and perceived health status: Means per person with out-of-pocket expense by age and sex, with standard errors. *NMCES household data: United States, 1977.*

	Perceived health status			
	Excellent	Good	Fair	Poor
Population totals				
	Thousands			
All persons[a]	93,935	78,902	22,046	7,100
Persons with out-of-pocket expense	70,436	59,186	17,498	5,597
Out-of-pocket expense				
	Mean (standard error)			
All persons[a]	$166 (8)	$205 (10)	$287 (17)	$437 (35)
Age in years				
Less than 6	87 (9)	107 (13)	147 (41)	—
6 to 18	145 (9)	145 (11)	190 (28)	—
19 to 24	161 (13)	198 (17)	245 (42)	—
25 to 54	180 (10)	203 (12)	258 (21)	437 (52)
55 to 64	215 (27)	269 (21)	356 (36)	490 (70)
65 or older	247 (23)	305 (23)	340 (30)	471 (63)
Sex				
Male	146 (8)	180 (11)	254 (20)	362 (41)
Female	187 (10)	224 (12)	309 (21)	494 (48)

[a]Excludes persons with unknown health status. — The sample cell was not large enough to estimate the population figure. **Source: National Center for Health Services Research.**

Table 6. Annual out-of-pocket expenses for personal health services and income: Means per person with out-of-pocket expense by family income adjusted for family size and by U.S. Census region, with standard errors. *NMCES household data: United States, 1977.*

Income adjusted for family size[a]	Total population (in thousands)	Total population with out-of-pocket expense (in thousands)	U.S. Census region				
			All regions	Northeast	North Central	South	West
			Mean (standard error)				
Total[b]	212,098	159,657	$205 (10)	$216 (12)	$175 (10)	$209 (11)	$235 (13)
At or below poverty line	26,034	14,302	247 (16)	292 (33)	219 (22)	221 (20)	298 (35)
Near poverty line	9,028	5,550	222 (20)	248 (45)	212 (34)	195 (26)	267 (46)
Other low income	33,316	22,689	214 (13)	194 (19)	197 (18)	218 (17)	249 (24)
Middle income	68,707	62,567	184 (9)	192 (13)	147 (10)	194 (12)	216 (15)
High income	64,412	54,033	213 (11)	234 (16)	184 (12)	220 (14)	226 (16)

[a]As defined by the U.S. Bureau of the Census (see p.10). [b]Includes persons with negative incomes. **Source: National Center for Health Services Research.**

similar measure is used in the federal income tax code, which requires that medical deductions be defined relative to taxable income; this measure has also been used to assess catastrophic health expense.

Table 7 shows that in 1977, approximately 8.0 million families (or 10 percent of all families), representing 15.5 million persons, spent nothing out of pocket; 22.6 million (or 28.4 percent of families), representing 61 million persons, spent up to 1 percent of their income; and 15.3 million (or 19.2 percent of families) spent between 1 and 2 percent of their income. Overall, about two-thirds of all families spent less than 3 percent of their income for personal health services (with half spending less than 2 percent), not counting health insurance premiums (Figure 1).

On the other hand, approximately a tenth of all families, representing about 18 million persons, had out-of-pocket expenses for health services greater than 10 percent of family income, and 4.2 percent of all families, comprising nearly 7.6 million people, had expenses exceeding 20 percent of family income. Thus, while a relatively infrequent occurrence overall, for roughly 8 million families out-of-pocket expenses for health services constituted a large financial burden in relation to their income.

Summary

Per capita annual out-of-pocket expenses for personal health services were $155 in 1977, and mean expenses per person with such expenses were $205. These amounts varied substantially by the characteristics of the population, particularly age and sex, and by type of service. For the whole population, the highest out-of-pocket expenses were for ambulatory physician services, dental services, prescribed medicines, and inpatient hospital services. Among those who paid for services out of pocket, costs associated with hospital care were the biggest source of expense. In addition to the 15 percent of the population who did not use any services, a little over half of people in the United States spent less than $100 out of pocket for health services. About 7 percent spent over $500, although the percent in each expense category varied according to the population group examined. As expected, families were less likely than individuals to have had no expense (4.9 percent) and more likely to have expenses greater than $500 (24.7 percent). Among groups defined by perceived health status, the burden of unreimbursed health care costs was relatively high among younger adults in poor health. Their out-of-pocket expense was more than twice that of those in excellent health and similar to that of the older population in poor health.

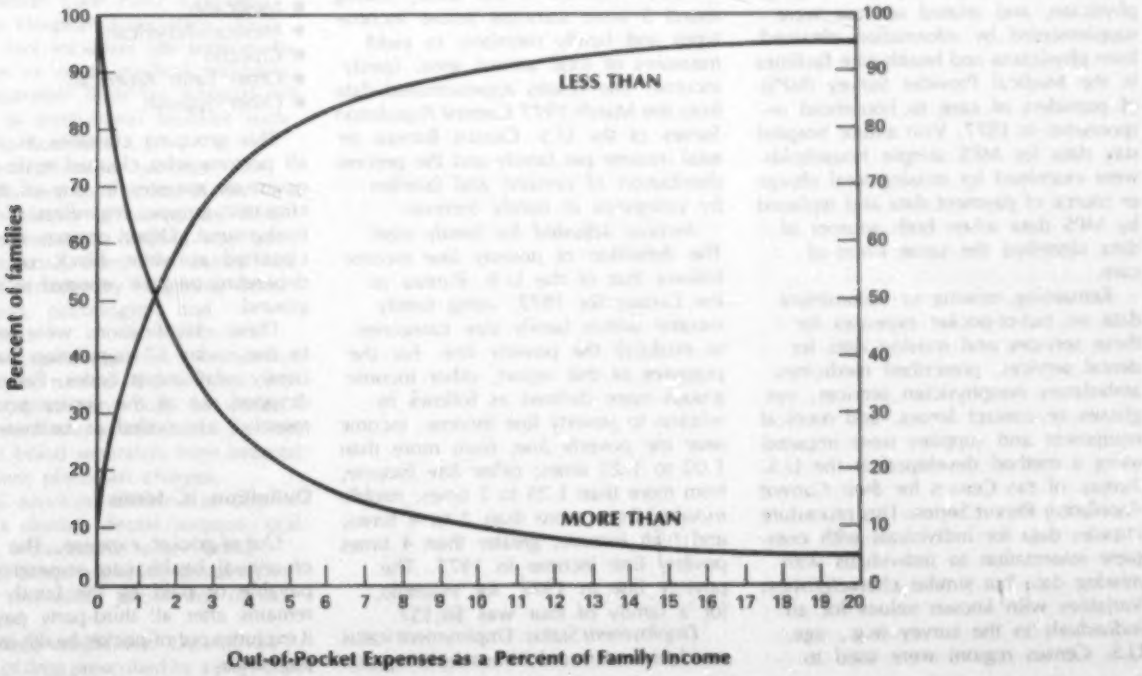
For those with any out-of-pocket expense, differences by U.S. Census region within groups defined by income adjusted for family size were small, as were differences across these income groups. When considered relative to family income, it is clear that out-of-pocket expenses for health care impose a large financial burden on roughly a tenth of the U.S. population: 5.3 percent of families spent between 10 and 20 percent of their income on health care, and 4.2 percent spent 20 percent or more.

Table 7. Annual out-of-pocket expenses for personal health services and family income: Percent distribution of families and persons by intervals of out-of-pocket expense as a percent of family income, with standard errors. *NMCES household data: United States, 1977.*

Out-of-pocket expenses as percent of family income	Total population in thousands (standard error)		
	Families	Persons in families	Percent of families
0	7,960 (298)	15,544 (714)	10.0
0.1 to 0.9	22,631 (561)	60,997 (1742)	28.4
1.0 to 1.9	15,286 (403)	43,982 (1278)	19.2
2.0 to 2.9	8,419 (252)	24,537 (797)	10.6
3.0 to 4.9	9,275 (270)	26,436 (953)	11.6
5.0 to 9.9	8,128 (291)	21,800 (841)	10.2
10.0 to 19.9	4,226 (181)	10,405 (512)	5.3
20.0 or more	3,337 (172)	7,587 (470)	4.2
Unknown	415 (47)	828 (121)	0.5

Source: National Center for Health Services Research.

Figure 1. Cumulative percent distribution of families by out-of-pocket expense as a percent of family income.



Sources and Limitations of the Data

The data in this report were obtained in the major survey component of the National Medical Care Expenditure Survey (NMCES). In five rounds of household interviews, information was elicited on the use of and expenditures for health services. The survey reference period was January 1 to December 31, 1977. For the interview instruments, see *NHCES Instruments and Procedures 1* (Bonham and Corder, 1981). Information supplied by the respondent was amended in each round through the household summary update process, which allowed the respondent to correct or add to the information provided in previous interviews. Trained interviewers then updated a computer-generated summary of both expenditures and sources of payment for health care previously reported by the respondent. In the fifth interview, respondents reviewed with the interviewer each reported event of health care shown in the household summary.

Imputation of missing data

The estimates in this data preview of out-of-pocket expenses for ambulatory physician visits and for inpatient hospital, physician, and related services were supplemented by information obtained from physicians and health care facilities in the Medical Provider Survey (MPS) of providers of care to household respondents in 1977. Visit and/or hospital stay data for MPS sample households were examined for missing total charge or source of payment data and replaced by MPS data when both sources of data identified the same event of care.

Remaining missing or inconsistent data on out-of-pocket expenses for these services and missing data for dental services, prescribed medicines, ambulatory nonphysician services, eye glasses or contact lenses, and medical equipment and supplies were imputed using a method developed at the U.S. Bureau of the Census for their *Current Population Report* Series. This procedure imputes data for individuals with complete information to individuals with missing data but similar characteristics. Variables with known values for all individuals in the survey (e.g., age, U.S. Census region) were used to form groups of donors with known data on out-of-pocket expenses and identical groups of recipients with missing data. Within such groups, data were randomly assigned from donors to recipients. The percent of persons with unknown out-of-pocket expenses for services included in the MPS ranged from 4.3 percent for ambulatory physician services to 1.1 percent for inpatient physician services. The percent of persons with unknown out-of-pocket expenses for services not included in the MPS ranged from 10.9 percent for prescribed medicines to 0.2 percent for glasses and contact lenses.

Population characteristics

Families. For the purpose of these estimates, families are defined as households consisting of individuals related by blood, marriage, or adoption. Unrelated individuals residing in the same sample housing unit were treated as distinct single member families. College students who lived away from their original household were treated as separate families.

Family income. Incomes as reported for each member of the family during round 5 were summed across income types and family members to yield measures of total annual gross family income. The results approximated data from the March 1977 *Current Population Survey* of the U.S. Census Bureau on total income per family and the percent distribution of persons and families by categories of family income.

Income adjusted for family size. The definition of *poverty line income* follows that of the U.S. Bureau of the Census for 1977, using family income within family size categories to establish the poverty line. For the purposes of this report, other income groups were defined as follows in relation to poverty line income: income *near the poverty line*, from more than 1.00 to 1.25 times; *other low income*, from more than 1.25 to 2 times; *middle income*, from more than 2 to 4 times; and *high income*, greater than 4 times poverty line income in 1977. The poverty line in 1977, for example, for a family of four was $6,157.

Employment Status. Employment status was based on round 5 household reports. Persons were defined as employed if they had worked for pay for the week preceding the round 5 interview. Persons were defined as unemployed if they had not worked for pay during the week before the round 5 interview, were not full-time students, and were either laid off or looking for work. Persons not in the labor force include all civilians 16 years or older not classified as employed or unemployed by these definitions. The sample was categorized to match population data from the Bureau of Labor Statistics on the percent distribution of persons 16 years of age or older by employment status for December 1977.

Race/Ethnicity. Classification by ethnic/racial background was developed from a series of questions asked in the round 5 interview. Persons 17 years of age or older were asked if their racial background were best described as American Indian or Alaskan Native; Asian or Pacific Islander; black; white; or other. They also were asked if their main national origin or ancestry was among one of the following:

- Puerto Rican
- Cuban
- Mexican
- Mexicano
- Mexican-American
- Chicano
- Other Latin American
- Other Spanish

This grouping classifies as Hispanic all persons who claimed main national origin or ancestry in one of these Hispanic groups, regardless of racial background. Other persons were then classified as white, black, or other depending on their reported racial background.

These classifications were extended to the under 17 population based on family relationship codes. Persons who dropped out of the survey prior to round 5 are coded as unknown.

Definition of terms

Out-of-pocket expense. The share of annual health care expenditures payable or paid by the family that remains after all third-party payments; it excludes out-of-pocket health insurance premiums.

Ambulatory physician services. Any contact with a doctor of medicine (M.D.) or doctor of osteopathy (D.O.) in the physician's office, a patient's home, a hospital outpatient department, emergency room or other medical setting, including medical advice over the telephone if a charge was made for these services. Not included are physician services provided during inpatient hospital stays.

Ambulatory services by health care providers other than physicians. Any contact with optometrists, psychologists, psychiatric social workers or any other mental health worker, podiatrists, chiropractors, physical therapists, nurses, nurse practitioners, paramedics, home health aides, or physician assistants. A contact with these providers can have occurred in the provider's office, a patient's home, a hospital outpatient department, an emergency room or other medical setting, and includes medical advice over the telephone if a charge was made for these services. Services provided during inpatient hospital stays are not included.

Hospital services. Stays in short and long-term facilities listed in the *American Hospital Association Guide to the Health Care Field* (Chicago: American Hospital Association, 1978 edition). Not included are services by physicians or other medical providers billed separately from the hospital bill or stays in institutional facilities such as nursing homes.

Inpatient physician services. Any service provided by a doctor of medicine (M.D.) or doctor of osteopathy (D.O.) during an inpatient hospital stay but billed separately from the hospital bill, including services by surgeons, anesthesiologists, pathologists, and radiologists.

Other hospital expenses. Any service except those named above connected with a hospital stay, such as special nurses, anesthesia, or ambulance services that were billed separately from hospital or inpatient physician charges.

Dental services. Defined as any visit to a dentist, dental surgeon, oral surgeon, orthodontist, other dental specialist, dental hygienist, dental technician, or any other person for dental care.

Prescribed medicines. Defined as any kind of drug prescribed by a physician and purchased or otherwise obtained, including refills.

Eyeglasses and contact lenses. Defined as purchases and repairs of new or replacement glasses or contact lenses. Not included are examinations by ophthalmologists, which are included in ambulatory physician services, and examinations by optometrists, which are included in ambulatory nonphysician services.

Medical equipment and supplies. Defined as purchases or rentals of wheel chairs or crutches, corrective shoes, supportive devices, hearing aids and supplies, syringes, needles, and other similar items.

Technical Notes

Sample design

The survey sample was designed to produce statistically unbiased national estimates that are representative of the civilian noninstitutionalized population of the United States. To this end, the study used the national multistage area samples of the Research Triangle Institute and the National Opinion Research Center. Sampling specifications required the selection of about 14,000 households. Data were obtained for about 91 percent of eligible households in the first interview and 82 percent by the fifth interview. Approximately 11 percent of all survey participants provided data for only some of the time in which they were eligible to respond. Information for these respondents was adjusted to account for this partial nonresponse (Cohen, 1981). For a detailed description of the survey sample and of sampling, estimation, and adjustment methods, including weighting for nonresponse and poststratification, see Cohen and Kalsbeek, 1981.

Rounding

Estimates as presented in the tables are rounded to the nearest tenth of a percent and to the nearest dollar.

Reliability of estimates

Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken. This potential difference between sample results and a complete count is the sampling error, which is measured by a statistic called the standard error of the estimate.

The chance that an estimate from the sample would differ from a complete census by less than one standard error is about 68 out of 100. The chance that the difference between the sample estimate and a complete census would be less than twice the standard error is about 95 out of 100.

Tests of statistical significance were used to determine whether differences between population estimates exist at specified levels of confidence or whether they simply occurred by chance. Differences were tested using Z-scores having asymptotic normal properties, based on the rounded figures at the 0.05 level of significance. Unless otherwise noted, only statistically significant differences between estimates are discussed in the text.

Estimated standard errors

Standard errors for the statistics presented in this paper were approximated, by interpolation where necessary, using a curve smoothing procedure developed at the National Center for Health Services Research (Cohen, 1979).

Relative standard errors

Totals : Where the statistics of interest are total estimates (T) of the population, or of total out-of-pocket expenditures, an estimate of the standard error, SE, can be obtained by multiplying the relative standard error, expressed as a percent, of the respective T, RSE(T), by T, and then dividing by 100. Thus,

$$SE(T) = \frac{T \cdot (RSE(T))}{100}$$

For estimated population totals of persons or families, the approximate relative standard errors expressed as percent are as follows:

Table I

Estimated population totals (in thousands)	Relative standard error (%)
500	18.9
1,000	13.5
2,500	8.7
5,000	6.4
10,000	4.8
25,000	3.5
50,000	3.0
100,000	2.6
200,000	2.4

Table II

Estimated population totals for families (in thousands)	Relative standard error (%)
500	12.1
1,000	8.7
2,500	5.7
5,000	4.3
10,000	3.4
25,000	2.7
50,000	2.4
80,000	2.3

Example: An estimate of 4.9 million persons in the U.S. population with $1,000 or more in annual out-of-pocket expenses for personal health services (212,098,000 x .023, Table 3) has a relative standard error of 6.4 percent (Table I). The standard error of this estimate, then, is

$$SE(T) = \frac{4,900,000(6.4)}{100} = 313,600$$

For the estimated annual out-of-pocket expenditures for personal health services, the approximate relative standard errors expressed as percent are as follows:

Table III

Estimated expenditures (in thousands)	Relative standard error (%)
$25,000	36.4
50,000	25.9
100,000	18.5
250,000	12.1
500,000	9.0
1,000,000	6.9
2,500,000	5.3
5,000,000	4.6
10,000,000	4.3
25,000,000	4.0
35,000,000 or more	4.0

Ratios: When the statistic of interest is a ratio, Y, such as a rate or mean, both the relative standard error of the numerator, RSE(N), and the relative standard error of the denominator, RSE(D), must be considered. Thus, Y = N/D, and the standard error of Y is approximated by:

$$SE(Y) \doteq Y \frac{\sqrt{RSE(N)^2 + RSE(D)^2}}{100}$$

where

$$Y = \frac{\text{total out-of-pocket expenses}}{\text{number in population}}$$

for the mean expense per population; and

$$Y = \frac{\text{total out-of-pocket expenses}}{\text{persons with out-of-pocket expense}}$$

for the mean expense per person with expense.

Example: For the standard error of the mean out-of-pocket expense for all personal health services per person with expense ($205; Table 1), the relative standard error of the numerator, SE(N), is 4.0 (159,690,000 persons with expense × 205 = $32.7 billion, Table III); and the relative standard error of the denominator is approximately 2.5 (Table II). Then the standard error is:

$$SE(\$205) = \$205 \frac{\sqrt{(4.0)^2 + (2.5)^2}}{100} = \$9.7$$

Direct standard error estimates

When the statistic of interest is expressed as a percent for person- or family-based measures, direct estimates of standard errors have been derived for ease of calculation. For the estimated percent of persons or families with or without out-of-pocket expenses, approximate standard errors expressed as percent are shown in Tables IV and V, respectively.

Table IV

Persons in the base of the percent (in thousands)	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
	Approximate standard error (in percent)						
1,000	1.9	2.9	4.0	5.3	6.1	6.5	6.6
2,500	1.2	1.8	2.5	3.4	3.8	4.1	4.2
5,000	0.8	1.3	1.8	2.4	2.7	2.9	3.0
10,000	0.6	0.9	1.3	1.7	1.9	2.1	2.1
25,000	0.4	0.6	0.8	1.1	1.2	1.3	1.3
50,000	0.3	0.4	0.6	0.8	0.9	0.9	0.9
100,000	0.2	0.3	0.4	0.5	0.6	0.7	0.7
200,000	0.1	0.2	0.3	0.4	0.4	0.5	0.5

Example: The estimate of 2.3 percent of the U.S. population with $1,000 or more of annual out-of-pocket expenses for all personal health services in 1977 is based on a population total of 212,098,000 (Table 3). This estimate has a standard error of approximately 0.1 percent.

Table V

Families in the base of the percent (in thousands)	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
	Approximate standard error (in percent)						
500	1.7	2.6	3.6	4.8	5.5	5.8	6.0
1,000	1.2	1.8	2.5	3.4	3.9	4.1	4.2
2,500	0.7	1.2	1.6	2.1	2.4	2.6	2.7
5,000	0.5	0.8	1.1	1.5	1.7	1.8	1.9
10,000	0.4	0.6	0.8	1.1	1.2	1.3	1.3
25,000	0.2	0.4	0.5	0.7	0.8	0.8	0.8
50,000	0.2	0.3	0.4	0.5	0.5	0.6	0.6
80,000	0.1	0.2	0.3	0.4	0.4	0.5	0.5

References

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Available NHCES Publications

NHCES Data Preview 1: Who Are the Uninsured? Initial estimates of survey data indicated that 26.6 million persons or about 12.6 percent of the civilian population were uninsured in the first quarter of 1977 . (This excludes persons serving in the armed forces and residents of nursing homes, prisons, and long-term psychiatric hospitals.) The study also showed that in 81.4 percent of U.S. families, every member was covered by some type of insurance from January to March 1977. There were no differences in insurance coverage between men and women, but there were variations according to age, color and geographic groups. Of six age groups studied, persons 18 to 24 were most likely to be without coverage. In this group, 21.9 percent of all persons lacked coverage. A large difference was noted in coverage between whites and all other races. Twelve percent of whites were found to be without coverage compared with 18 percent of all other races. Persons with relatively few years of education were more likely to be without coverage: 15.5 percent of those with less than 12 years of education (and over 17 years old) had no coverage, compared with 12.1 percent of high school graduates and 8.9 percent of persons who had 13 years or more of education. Urban populations had greater coverage than rural ones, with 18 percent of rural residents lacking coverage while only 10.4 percent of those living in the 16 largest urban areas were not covered.

NHCES Data Preview 2: Charges and Sources of Payment for Dental Visits with Separate Charges. In a survey of dental visits during the first quarter of 1977, for which a separate charge was made for each visit, the average cost of the visit was reported to be $31.71, of which 77 percent was paid by the patient or his family. Private health insurance paid 13 percent of the charge and 10 percent was paid by public sources such as Medicaid. Among age groups, the average charge for dental visits was $35.60 for adults 20 to 44 and $22.31 for children 12 or younger. Generally, the proportion of the dental bill paid by the family increased as the patient grew older. The lowest proportion of the bill paid by the family was for children 12 or under — 67 percent; persons 45 to 64 paid 83 percent of the bill; and those 65 and older paid 93 percent. There were no significant differences between the average bill received by whites and all other races. but the average proportion of those bills paid by private health insurance did vary significantly. Whites paid 78 percent of the bill, while all others paid 61 percent. A large proportion of charges for the latter group was paid by public sources. The average charge for dental visits did not vary significantly with the education of the patient. However, the average proportion paid by the family increased with the education level, from 72 percent for persons with 11 years of education or less to 80 percent for persons with 12 years, and 85 percent for those with 13 years or more.

NHCES Data Preview 3: Who Initiates Visits to a Physician? Since a physician's income is influenced by how often patients are seen, the question of who initiates a visit to a physician is an important one. This Data Preview looks at how often visits to the doctor were initiated by physicians and by patients during the first three months of 1977. The medical appropriateness of the visits was not taken into account. Results indicate that about 60 percent of the visits were initiated by patients, while about 36 percent were initiated by physicians by making an appointment with the patient during a previous visit. As the age of the patient increased, physician-initiated visits increased. Only 23 percent of visits were physician-initiated for children up to age 18. For persons in the 55- to 64-year age group, about 46 percent of the visits were initiated by a physician. There were no statistical differences in the percentage of physician-initiated visits with respect to sex, color, or education. The percentage of physician-initiated visits rose with the density of physicians in a state. For states with less than 100 physicians per 100,000 persons, 31.1 percent of the visits were initiated by physicians; for states with 175 or more physicians per 100,000 persons, 39.6 percent of the visits were initiated by physicians. In the physician's office, 36.3 percent of the visits were initiated by the physician, with 59.8 percent initiated by the patient. In hospital outpatient clinics, 50.7 percent of the visits were initiated by the physician, with 44.8 percent initiated by the patient; in hospital emergency rooms, 89.2 percent of the visits were initiated by the patient and 6.2 percent by the physician.

NHCES Data Preview 4: Health Insurance Coverage of Veterans. During the first quarter of 1977, slightly more than 11 percent of veterans, or about three million men 20 years or older, were uninsured compared with 14.5 percent of men in the general population. The exception to veterans' relatively high level of insurance coverage was the youngest age group -- 20 to 25 years of age -- in which 34.6 percent were found to be uninsured compared to 24.0 percent of men who had not served in the armed forces. Three-quarters of veterans had private health insurance compared to about 64 percent of men in the general population. It was relatively infrequent for veterans to be covered by public insurance, such as Medicare and Medicaid, except for disabled veterans, who were considerably more likely to be covered by such public programs and much less likely than other veterans to have private health insurance. When comparing insurance coverage for veterans with men in the general population on the basis of color, education, and region of residence, a greater percentage of veterans were found to be insured. However, for both veterans and nonveterans, highly educated men were more likely to have health insurance; white men were more likely to be insured than all others; and higher percentages of men had insurance in the Northeast and North Central regions of the country than in the South and the West.

NHCES Data Preview 5: Charges and Sources of Payment for Visits to Physician Offices. The mean charge for a physician office visit during the first quarter of 1977 was $21.29. Of this, an average proportion of 0.69, or $14.69, was paid by the patient or his family. Private health insurance paid an average proportion of 0.16, Medicare 0.04, and Medicaid 0.07, with the remainder being paid by other public sources. Among age groups, the average cost of an office visit was lowest for children 5 years or younger ($14.62). As patients' education level rose, so did the average cost of a doctor visit, ranging from a high of $28.10 for persons with 16 or more

years of education to $18.91 for persons with 11 years or less. Urban dwellers were charged more for a doctor's office visit than residents of rural areas. Charges also varied by geographic region, with highest charges found in the West ($28.01). Residents of the North Central region paid $18.08, the Northeast $21.02, and the South $20.39. The average charge for an office visit did not differ significantly according to sex or racial group.

NHCES Data Preview 6: Waiting Times in Different Medical Settings: Appointment Waits and Office Waits. In early 1977 the average wait for an appointment in ambulatory care settings was seven days. The waiting time for an appointment for all types of services was longer in hospital outpatient departments (10.1 days) than in physician offices (6.9 days). For visits associated with preventive services such as prenatal and postnatal care or eye examinations, the wait was much longer, averaging 14.1 days for visits in a doctor's office. Waiting times were shortest for children less than six years old. Generally, females waited longer than males for an appointment (7.8 days compared to 5.9 days), and whites waited longer than other racial groups (7.2 days, white; 5.3 days, all others). Persons living in urban areas waited roughly one day longer to see a doctor than rural residents. In the first quarter of 1977, patients waited an average of 31 minutes to see a physician in all care settings. The average waiting time in a doctor's office was 29 minutes, in a hospital outpatient department 45 minutes, and in a hospital emergency room 38 minutes. While little difference was noted in waiting times across age groups or by sex, a significant difference was found between whites and other racial groups: whites waited an average of 28 minutes in the doctor's office compared to an average of 40 minutes for all other groups. This disparity was even more pronounced in hospital outpatient departments, where whites waited an average of 41 minutes and others 61 minutes.

NHCES Data Preview 7: Employer and Employee Expenditures for Private Health Insurance. Although 88.3 percent of American employees worked for organizations that offered some form of health insurance plan, the availability of the plan and the employee's share of the premium burden varied considerably, depending on the size of the firm, its union status, and the percentage of low-wage employees on the payroll. Larger firms and those with union contracts were more likely to offer health insurance plans to their employees and to assume a greater share of the premium cost. However, in organizations where more than half of the workforce earned low or minimum wages, 30.7 percent of the workers -- almost three times the national average -- could not obtain health insurance through their jobs. Also, low or minimum-wage workers were least likely to be eligible for health insurance plans that were offered on the job.

NHCES Data Preview 8: Dental Services: Use, Expenditures, and Sources of Payment. About 60 percent of the American people do not see the dentist every year. But nearly 8 million people do, and their dental care costs total more than $12 billion annually. The family pays about three-quarters of these costs out-of-pocket, making dental services one of the family's most expensive types of health care. Not surprisingly, children see the dentist most often, with half of those between six and 18 having at least one dental visit during the year. Whites see the dentist more often than minorities. Nearly half of all whites see the dentist at least once during the year, compared to 23 percent of blacks and 30 percent of Hispanics. Family income and education also make a difference. Individuals in families earning more than $20,000 annually are 20 percent more likely to have a dental visit than people whose families make less than $12,000. Nearly two-thirds of those in families headed by a person with 16 or more years of education obtain dental care during the year, compared to only a fourth of those in families headed by someone with fewer than nine years of schooling. The family's share of dental care costs varies considerably by age. The family pays the lowest share (60.2 percent) for children under six, but about 90 percent of annual expenses incurred by the elderly. Sources of payment also vary according to racial and ethnic background. Private health insurance assumes a relatively large share of dental care costs for blacks--29.3 percent compared to 16.1 percent for Hispanics and 18.2 percent for whites. Medicaid pays for roughly a tenth of annual dental care expenditures for minorities, but less than two percent for whites.

NHCES Data Preview 9: Prescribed Medicines: Use, Expenditures, and Sources of Payment. About 60 percent of the American people, or about 120 million individuals, obtain a prescription medicine each year. The medicines--drugs, ointments, refills, and other items prescribed by a doctor--are used most by the elderly, who average slightly more than 14 during the year. Those between 55 and 64 average nearly 12, people 25 to 54 obtain about seven, and those 18 or younger average around four, counting only those who obtained at least one prescription item during the year. Prescribed medicines cost an average of $6.24 each in 1977, with total expenditures reaching $5.5 billion. Nearly three-quarters of those total costs are paid by the family out-of-pocket, with private insurance paying about 12 percent, Medicaid nearly eight percent, and other sources about six percent. Study results show that overall expenditures for prescribed medicines are highest for the elderly, who incur the highest average annual expenses as well as the most out-of-pocket costs. For example, each person 65 or older spent about $93 in 1977 on prescribed medicines--about 15 percent more than those in the second-highest expenditures group and nearly five times more than those 18 or younger. Nearly half of the 10 million people with out-of-pocket expenses exceeding $100 are 65 or older. Females are more likely than males to obtain prescription medicines, have higher rates of use, and higher mean annual expenses for the medicines. The family pays a higher share of prescribed medicine costs among whites than non-whites. Private insurance pays about 15 percent of whites' average annual expenses for prescribed medicines, but less than seven percent for blacks and Hispanics. However, Medicaid picks up about 25 percent of annual prescribed medicine expenses for blacks and Hispanics, or about five times the share for whites. Annual expenses and sources of payment also vary slightly among geographic regions. Mean annual

expenses are highest in the South, where private health insurance contributes least to such expenses. Families in the West pay slightly less than the national average for prescribed medicine costs.

NHCES Data Preview 10: Medical Equipment and Supplies: Purchases and Rentals, Expenditures, and Sources of Payment. About 13 million people, or 6.2 percent of Americans, purchase or rent medical equipment and supplies each year. Not surprisingly, a disproportionate number of these people are elderly, who are twice as likely as the rest of the population to obtain wheelchairs, crutches, corrective shoes, supportive devices, hearing aids, syringes, needles, and similar items. In 1977, the average charge for a purchase or rental was $48, with total cost per person making a purchase or rental running around $70 for the year. Most people paid less than $25 of those costs out-of-pocket. However, people 65 or older are twice as likely as the rest of the population to spend $25 or more of their own money each year buying or renting medical equipment and supplies. The elderly also are four times as likely as adults 25 to 54 to pay more than $100 out-of-pocket. Families with elderly members not only incur higher expenses than the average family, but also pay a considerably higher share of those expenses for their medical equipment and supplies. That is because expenditures by the elderly for medical equipment and supplies are about 50 percent higher than the national mean.

NHCES Data Preview 11: Eyeglasses and Contact Lenses: Purchases, Expenditures, and Sources of Payment. Vision aids are a major health care expense for more than 26 million Americans, who spend about $1.6 billion annually for purchases and repairs of eyeglasses and contact lenses. Annual expenditures in 1977 averaged $76 (for each person who incurred such an expense), of which 84 percent was paid out-of-pocket by the patient's family. For about half of the people with out-of-pocket expenses, or about 9.5 million individuals, outlays ranged between $50 and $99. For another 3 million people, out-of-pocket costs were $100 or more. Slightly more than 3 percent of the population, more than 7 million people, obtained glasses or contact lenses at no charge or were billed for them in conjunction with other health services. Out-of-pocket expenditures were highest for persons in the upper income and educational brackets and lowest for those with family incomes less than $12,000 annually. The share of vision aid costs assumed by private health insurance was high among those 19 to 54 years and the employed, amounting to about 10 percent for each group. The likelihood of purchasing vision aids, or having them repaired, increased with age: from 8.5 percent for children 6 to 18, to 20 percent for adults between 55 and 64. Young adults 19 to 24 years of age were more than twice as likely as those 25 to 54 to have purchased contact lenses. This was true also for females compared to males (1.5 percent and 0.8 percent, respectively). Whites were somewhat more likely to have purchased vision aids than minorities.

NHCES Data Preview 12: Usual Sources of Medical Care and Their Characteristics. More than four-fifths of Americans had a usual source of medical care in 1977, with two-thirds typically going to a physician's office. About 14 percent lacked such a source, mostly because they claimed they seldom or never got sick. Nearly four million people had a usual source of care that was no longer available, which may have impaired their access to care. For example, those people generally saw a doctor far less often than people having a usual source of care. Patients were apt to see a specific doctor, and were most likely to have house calls available to them, when a physician's office was their usual source of care. Office hours and emergency treatment were the most commonly available services, followed by regular Saturday hours. Evening hours and regular weekend hours were offered somewhat more often to people who typically obtained care at a hospital outpatient department, health center, or similar site. Four-fifths of the population traveled less than 30 minutes to obtain medical care from the usual source. Even among those who traveled longer, only about 20 percent considered this to be too long.

NHCES Instruments and Procedures 1: NMCES Household Interview Instruments. This report reproduces and discusses the questionnaires used in collecting data in the household portion of the National Medical Care Expenditure Survey (NMCES). The bulk of the report focuses on the core questionnaire, the main data collection instrument for the survey, which covered such areas as disability days, the use of various types of health services, and associated charges and sources of payment for those services. Also included are supplements to the core questionnaire, related survey control and summary forms, and other kinds of instruments used in obtaining data from the 14,000 participating households. Of particular interest are the sections in the report describing the reasons for survey design, and relating specific items in the instruments to the information requirements of the National Health Care Expenditures Study, for which NMCES was the data-gathering component.

NHCES Instruments and Procedures 2: Estimation and Sampling Variances in the Household Survey. This report explains the sample design and associated methods of variance estimation for the household portion of the National Medical Care Expenditure Survey (NMCES). The first part focuses on how participants were selected through two independent, four-stage probability samples of the civilian, non-institutionalized population. Emphasis is placed in the second portion of the report on the sampling weights. Sample estimation for the household portion of NMCES was designed to give disproportionately greater representation to families lacking health insurance. Because this design was not self-weighting, particular importance was placed on the development of appropriate sampling weights. The new report describes how those sampling weights reflected the expected number of units in the survey population accounted for by each sampling unit, multiplied by a number of adjustment factors. These included compensation for nonresponse, post-stratification and for the combination of samples. Estimation equations are detailed, and problems of variance estimation are discussed.

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DHHS Publication No.
(PHS) 82-3332